

WHAT IS CLAIMED IS:

1. A photonic network node comprising:
means for demultiplexing an optical signal into channels;
5 photonic switch fabric;
means for monitoring before and after the photonic switch fabric;
means for protecting channels responsive to the monitoring means;
means for compensating for channel impairment responsive to the
monitoring means; and
10 means for multiplexing a plurality of channels into an optical.
2. A node as claimed in claim 1 wherein the photonic switch fabric includes
a plurality of optical switch planes.
- 15 3. A node as claimed in claim 1 wherein the means for demultiplexing
includes an 1:M demultiplexer.
4. A node as claimed in claim 1 wherein the means for monitoring includes
fast line scanners.
- 20 5. A node as claimed in claim 4 wherein the fast line scanners couple prior
to the means for demultiplexing.
6. A node as claimed in claim 4 wherein the fast line scanners couple after
25 the means for multiplexing.
7. A node as claimed in claim 1 wherein the means for monitoring includes
slow line scanners.
- 30 8. A node as claimed in claim 4 wherein the slow line scanners couple prior
to the means for demultiplexing.
9. A node as claimed in claim 4 wherein the slow line scanners couple after
the means for multiplexing.
- 35 10. A node as claimed in claim 1 wherein the means for monitoring includes
wrapper readers.

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11. A node as claimed in claim 1 wherein the means for monitoring includes channels performance monitors.

5 12. A node as claimed in claim 1 wherein the means for multiplexing includes an M:1 multiplexer.

13. A photonic node for multi-vendor and multi-carrier interworking comprising means for performance monitoring; and
10 means for impairment compensating coupled thereto.

14. A photonic node as claimed in claim 13 wherein the means for monitoring supports network wide performance and fault management, and the triggering of network wide protection and restoration options.
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15. A photonic node as claimed in claim 13 wherein the means for monitoring includes means for triggering of network wide protection and restoration.

16. A photonic node as claimed in claim 13 wherein the means for monitoring includes means for detecting and isolating photonic node specific faults and mis-connects, and means for triggering protection switching to redundant modules when appropriate.
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17. A photonic node as claimed in claim 13 wherein the means for monitoring includes photonic node output channel power level compensation responsive thereto.
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18. A photonic node as claimed in claim 13 wherein the means for monitoring includes photonic node output channel dispersion compensation responsive thereto.
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19. A photonic node as claimed in claim 13 further comprising means for interfacing with electrical signaling network nodes.